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GUIDED STUDIES MEASUREMENT AND EVALUATION REPORT FOR FIRST SEMESTER, 1966-67.

DAYTONA BEACH JUNIOR COLL., FLA.

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DESIGNED FOR STUDENTS WHO ARE DEFICIENT IN ACADEMIC SKILLS AT THE TIME OF ADMISSION, THE GUIDED STUDIES PROGRAM AT DAYTONA BEACH JUNIOR COLLEGE IS INTENDED TO HELP SUCH STUDENTS TOWARD ULTIMATE ENROLLMENT IN THEIR DESIRED PROGRAMS OR TOWARD DISCOVERY OF MORE APPROPRIATE GOALS. THE PROGRAM INCLUDES ENGLISH, READING, SOCIAL SCIENCE, AND MATHEMATICS. SELECTED ON THE BASIS OF PREVIOUS GRADES, COUNSELOR RECOMMENDATIONS, OR TEST SCORES AT ENTRANCE, STUDENTS MAY PROGRESS AT THEIR OWN RATES TOWARD MEETING PREREQUISITES FOR ENROLLMENT IN REGULAR COLLEGE LEVEL CLASSES. ANALYSIS OF TEST SCORES OF STUDENTS IN THE PROGRAM SHOWED A WIDE RANGE OF ABILITY WITH PRONOUNCED NEGATIVE SKEWNESS. IN THE SCHOOL AND COLLEGE ABILITY TESTS, THE MEAN OF THE GROUP WAS SIGNIFICANTLY BELOW NATIONAL NORMS, ALTHOUGH THERE WAS CONSIDERABLE OVERLAPPING BETWEEN THE STUDY AND THE NORM GROUPS. SIMILAR RESULTS WERE OBSERVED IN THE WRITING SAMPLE OF THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS. BRIEF DESCRIPTIONS OF THE COURSES AND TABLES OF TEST SCORES, WITH DETAILED STATISTICAL ANALYSIS, ARE INCLUDED. (WO)

DAYTONA BEACH JUNIOR COLLEGE

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DAYTONA BEACH, FLORIDA

Mr. Willard E. Field
Director of Student Personnel
Daytona Beach Junior College
Daytona Beach, Florida

Dear Mr. Field:

The accompanying report is a delineation of the existing rationale from which the Guided Studies program operates and an analysis of test data which shed light on the nature of the students enrolled in the program and the areas of study to which they are exposed.

This is the first step in providing for continuous reassessment of the program in the light of the fulfillment of its purposes.

Respectfully submitted,

J. Griffen Greene

J. Griffen Greene, Director
Guided Studies Program

/w

GUIDED STUDIES PERSONNEL

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FOREWORD

The Guided Studies Program as envisioned by the Daytona Beach Junior College is the implementation of a phase of educational philosophy upon which the community college concept is founded, to which many give lip service, and for which new junior colleges assume the responsibility of developing.

"An open-door" policy--completely opened for all high school graduates--will result in the admission of a substantial number of students who have been classified as poor risks. If the college accepts in full an obligation to provide an educational program appropriate to the needs and abilities of such students, it will be denied the 'deck clearing' device of removing at the end of the first term or semester all those who do not fit a restricted academic mold.[1]

"The admission policy of the college that embraces the community college concept, must be based on the assumption that every individual who has been graduated from high school can benefit from a community college education. Each student admitted must be regarded as capable of success in some facet of the community college curriculum."[2]

The material contained in this report attests to the effort of the college and the Guided Studies Program to obtain adequate information relative to each student, his strengths and his weaknesses.

Testing and the evaluation of the test data is an integral part of the Guided Studies Program.

With the intelligent use of this information we are able to assist the student, based on his ability, to find his appropriate program in the community junior college.

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[1] McGrath, Earl J., Universal Higher Education, McGraw-Hill Book Company, p. 112.

[2] Ibid., p. 118.

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Daytona Beach Junior College
Daytona Beach, Florida

Daytona Beach Junior College from its earliest inception has always been conscious of the variety of levels of achievement of students who compose its population.

Coupled with this knowledge has always been the immediate effort to provide some type of remedial help for students who possessed a high school diploma, but not the actual competence to do college level work.

Evidence of the College's efforts to provide remedial help for students who needed it are attested by the following quotations:

"The College is continuing various experiments in the remedial field. For example, in 1960-61, the Department of English offered a non-credit course, EH 99, to which certain entering freshmen were assigned on the basis of certain test scores and high school records. While this plan was fairly successful, it was discarded at the close of the year because it was believed to be not sufficiently related to EH 101.

"During the current year, certain sections of EH 101 are utilized for students formerly enrolled in EH 99. These sections meet five hours per week, with two hours devoted to remedial work.

"Certain entering freshmen have been assigned to a reading program on the basis of test scores. This program is also under continuing study and refinement.

"In addition, special sections of Algebra, meeting five hours per week, have been offered, similar to the plan for EH 101.

"The faculty is keenly aware of the deficiencies of some entering freshmen and is determined to find the best solution to the problem."[1]

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[1]Daytona Beach Junior College Institutional Self-Study, 1962, page 20.

The following quotation during October, 1965:

"During the last three year period, the administration and faculty have given considerable thought to the open-door admission policy. It was discovered that high school graduates who are in the lower one-third of the graduating class lack the basic fundamentals which are necessary for successfull college work. Because of this an experimental program known as the 'Guided Studies Program' was developed. A pilot study was conducted during the 1965 summer session and the Guided Studies Program has been initiated for the current school year. Students in the Guided Studies Program enroll in four courses of three semester hours each, consisting of basic English, basic mathematics, basic reading, and career planning. The purpose of the Guided Studies Program is to give individual attention to the problem of assessing the student's strengths and weaknesses. The program provides an entire semester in which the student can discover some area in which his potentialities can reach the greatest degree of realization. This Guided Studies Program is subject to continual evaluation by the personnel charged with the responsibility of conducting it, and the program will be systematically analyzed and revised at the end of the present semester."[2]

Beginning with the 1966-67 school term, we further refined our philosophy and took a new look at the "Open-Door Policy" as it related to the Daytona Beach Junior College.

To us now, the"Open-Door Policy" means that any student finishing high school with a high school diploma can enter the community junior college, notwithstanding his performance attested by his high school transcript. This is true because community junior colleges are required to

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[2]Daytona Beach Junior College Report to the Southern Association of Colleges and Schools, October, 1965.

admit high school graduates without regard to the quality and depth of their secondary school preparation.

Not infrequently, with the "Open-Door Policy," many applicants are ill equipped to cope with the rigors of the traditional academic schedule, but under the weight of social, economic or parental pressures, these students are encouraged to pursue the regular college program. Unable to meet the necessarily demanding standards, these students contribute to the alarming attrition in the community colleges. Where this situation prevails the open-door policy has defeated its purpose and the student has suffered irreparable psychological harm.

Daytona Beach Junior College believes in the open-door policy with the knowledge that it cannot limit its enrollment to high achieving students for whom success is likely. The logic of its philosophy dictates that it make every effort to help students as far along the education continuum as their abilities and interests allow. This college is committed philosophically to assist in the development of young men and women to the fullest extent of their capacity.

The capacity may manifest itself in any area of the broad educational program of the college from vocational, technical, associate degree program (terminal) to preparation for continued study at the university.

We at the college accept the open-door policy with modification.

These modifications are influenced by the following assumptions and criteria:

1. "Test scores per se do not determine future performance, they predict it on the basis of past performance which may be a result of factors other than innate ability."

2. Low achievement is not indicative of low innate ability, per se.

3. If a program of instruction at the level of students' abilities is provided, tremendous gains can frequently be achieved, both horizontally and vertically.

4. All students do not desire to pursue a baccalaureate degree, notwithstanding their ability to do so, and should be exposed to vocational and semi-professional areas of study.

5. Conversely, all for whom success is not predicted in transfer programs should not be relegated to vocational and semi-professional areas.

6. On a continuum of educational experience, an appropriate place should be found for everyone.

It is then within the criteria of the Guided Studies Program that:

1. Provisions are made for a minimum period of four semesters in which the student has the opportunity to assess his interests, abilities; and to choose the area in which he can pursue to the extent of his ability.

2. The program provides the opportunity for students who meet the college credit entrance requirements in any discipline to pursue the same in the college credit program, while matriculating in the Guided Studies Program for courses in which they have been less successful.

3. Students are given full benefit of a well-developed and comprehensive guidance and counseling program.

4. Provisions are made for the development of skills that are basic and durable, and general so that they will serve the student in a great variety of work roles. Such education includes the ability to analyze, to synthesize, to handle data, to see relationships, to see meanings, to judge evidence and to generalize.

5. A concentration of help is provided for the student in the quantitative and qualitative areas, with experiences in the other discipline augmenting this effort.

6. Faculty members are kept aware that their major functions in the Guided Studies Program is instruction.

The prime purpose of Guided Studies is to provide programs to develop growth on the part of those students who for some reason are deficient in their academic skills when they apply for admission to the college. These programs are designed to aid students toward ultimately enrolling in their desired programs, or discovering other educational pursuits appropriately suited.

Guided Studies provides opportunities for growth in four areas, English, reading, social science, and mathematics. It structures its

curriculum so the student might grow at his own rate of speed, stay in the program as long as he wishes as he prepares for his ultimate program, or receives help toward preparing for advancement in his vocation.

Guidance and counseling permeate the whole program. Counseling is performed by two full-time well trained personnel workers, one of whom is responsible for the course Psychology 91, Adjustment Psychology. Instructors in each discipline schedule ten hours each week for conferences for students who request help or for students who are requested by the instructors to come for counseling. The scheduled periods not only provide help for the student who is experiencing difficulty, but also for the student who is not working up to his potential.

In the Guided Studies Program the individual student and the college have responsibilities in this educative venture. The student to himself and to the program which he is accepting to bridge the existing gap between his previous school experiences and the college. The college to itself and to the student to provide courses which will assist him in making the needed adjustment.

To meet these responsibilities, Guided Studies offers designs for both individuals and groups. These designs are varied in order that they might perform the functions of aiding the persons or groups for which they are intended.

Before these designs are structured we ascertain an estimation of the capacity of a student to undertake the academic work of the next higher leval of schooling.

The instruments we use measure the two kinds of school related abilities which are most important in the greatest number of school endeavors, the Verbal and Quantitative. With this information we are able to measure and identify specific abilities and locate the student who is

especially advanced or retarded in abilities needed for the next higher level of schooling.

How do students get into this program in the first instance?

Students are selected for all or any part of the Guided Studies Program by counselors. The selection is based upon the evaluation of previous school work, recommendations of high school counselors, and the students scores on the Florida Twelfth Grade Test or equivalent, and by scoring in the lower third of SCAT and STEP Series.

In general, all candidates for admission to full time study in the college division who score 167 or below in the Twelfth Grade Testing Program are required to enroll full time in the Guided Studies Program.

The student is placed in the Reading Program:

1. If all scores on the Florida Twelfth Grade Test are low, especially English and Social Studies.
2. If the student scores below the (28-50) percentile band on the STEP Reading Test, and if his Verbal score on the SCAT is low.

TESTING

In an effort to pinpoint the difficulties of these students, the California Achievement Test is given for diagnostic purposes in the area of English and Mathematics.

The results of this test indicate the specific levels, weaknesses, and strengths of each student, thereby providing the opportunity for homogeneous grouping and directed teaching.

Instruction for each student begins at the lowest level of his or her performance.

At the beginning of the semester each student is given:

1. An Otis I. Q. Test
2. A Nelson-Denny A Test

3. An SRA Placement Test

At mid-semester the SRA Placement is rechecked.

At the end of the semester the student is given:

1. A recheck with the STEP Reading Test

2. A Nelson-Denny B Test

3. An SRA Placement Test

4. Other various classroom tests

If the student shows improvement, he is told how much improvement he has made. If the improvement is still not up to the 13th grade, he is recommended to continue in the Reading Program.

The student should make minimum scores of:

Nelson-Denny B - 12.5-13.0

STEP Reading - 28-50 Percentile

SRA - 12.5-13.0

This criteria should be met if the student is to go into first year regular college work.

Evaluation is carried on frequently in the classroom to point up the little success of each student, the accumulation of which provides the motivation for more difficult tasks.

SCHOOL COLLEGE ABILITY TEST

AND

SEQUENTIAL TEST OF EDUCATIONAL PROGRESS

Table 1

SCAT VERBAL SCORES (Level 1) OBTAINED BY 201 ENTERING FRESHMEN STUDENTS WHO TOOK ONE OR MORE COURSES IN GUIDED STUDIES AT DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA FALL, 1966

Steps	X	F	CF	FX	U	FU	FU^2	Class Norm %ile R	Class %ile Band	National %ile Band
320-321	320.5	1	201	320.5	19	19	361	99.8	99-100	93-96
318-319	318.5	0	200	000.0	18	0	000	99.5	99-100	91-95
316-317	316.5	0	200	000.0	17	0	000	99.0	99-99.8	89-94
314-315	314.5	0	200	000.0	16	0	000	99.0	99-99.5	86-93
312-313	312.5	0	200	000.0	16	0	000	99.0	99-99	83-92
310-311	310.5	0	200	000.0	16	0	000	99.0	98.5-99	78-91
308-309	308.5	2	200	617.5	13	26	338	99.0	98.5-99	75-89
306-307	306.5	1	198	306.5	12	12	144	98.5	97-99	71-86
304-305	304.5	3	197	913.5	11	33	363	98.3	95-99	66-83
302-303	302.5	2	194	605.0	10	20	200	97	92-96	60-78
300-301	300.5	2	192	601.0	9	18	162	95	87-98	54-75
298-299	298.5	10	190	2985.0	8	80	640	92	82-97	49-71
296-297	296.5	8	180	2372.0	7	56	392	87	76-95	43-66
294-295	294.5	13	172	3828.5	6	78	468	82	71-92	37-60
292-293	292.5	10	159	2925.0	5	50	250	76	62-87	32-54
290-291	290.5	11	149	3195.5	4	44	176	71	52-82	28-49
28 289	288.5	24	138	6924.0	3	72	216	62	45-76	24-43
286-287	286.5	18	114	5157.0	2	36	72	52	40-71	20-40
284-285	284.5	11	96	3129.5	1	11	11	45	36-62	17-34
282-283	282.5	7	85	1977.5	0	0	0	40	32-52	15-31
280-281	280.5	8	78	2244.0	-1	-8	8	36	28-45	12-25
278-279	278.5	8	70	2228.0	-2	-16	32	32	23-40	10-24
276-277	276.5	9	62	2488.5	-3	-27	81	28	19-36	8-21
274-275	274.5	10	53	2745.0	-4	-40	160	23	16-32	7-18
272-273	272.5	8	43	2180.0	-5	-40	200	19	12-28	6-16
270-271	270.5	5	35	1352.5	-6	-30	180	16	10-23	5-15
268-269	268.5	8	30	2148.0	-7	-56	392	12	8-19	4-12
266-267	266.5	3	22	799.5	-8	-24	192	10	7-16	3-10
264-265	264.5	2	19	529.0	-9	-18	162	8	6-12	2-8
262-263	262.5	2	17	525.0	-10	-20	200	7	5-10	1-7
260-261	260.5	3	15	781.5	-11	-33	363	6	4-8	0.8-5
258-259	258.5	1	12	258.5	-12	-12	144	5	3-7	0.6-4
256-257	256.5	1	11	256.5	-13	-13	169	4	2-6	0-3
254-255	254.5	3	10	763.5	-14	-42	588	3	1-5	0-2
252-253	252.5	2	7	505.0	-15	-30	450	2	0-4	0-1
250-251	250.5	5	5	1252.5	-16	-80	1280	1	0-3	0-0
				56915.0	35	66	8394			

N = 201 i = 2

Measures of Central Tendency:

$$Mdn = 284 + \left(\frac{45}{10} \times \frac{1}{18} \times 2\right) = 284.5$$

$$Mode = 288.5$$

$$M = \frac{\Sigma FX}{N} = \frac{56915.0}{201} = 283.1$$

$$S.E_m = \frac{S.D.}{\sqrt{N}} = \frac{12.92}{\sqrt{201}} = 0.911$$

Measures of Variability:

$$\text{Variance: } s^2 = i^2\left[\frac{\Sigma FU^2}{N} - \left(\frac{\Sigma FU}{N}\right)^2\right] = 4\left[41.71 - (.33)^2\right] = 166.4$$

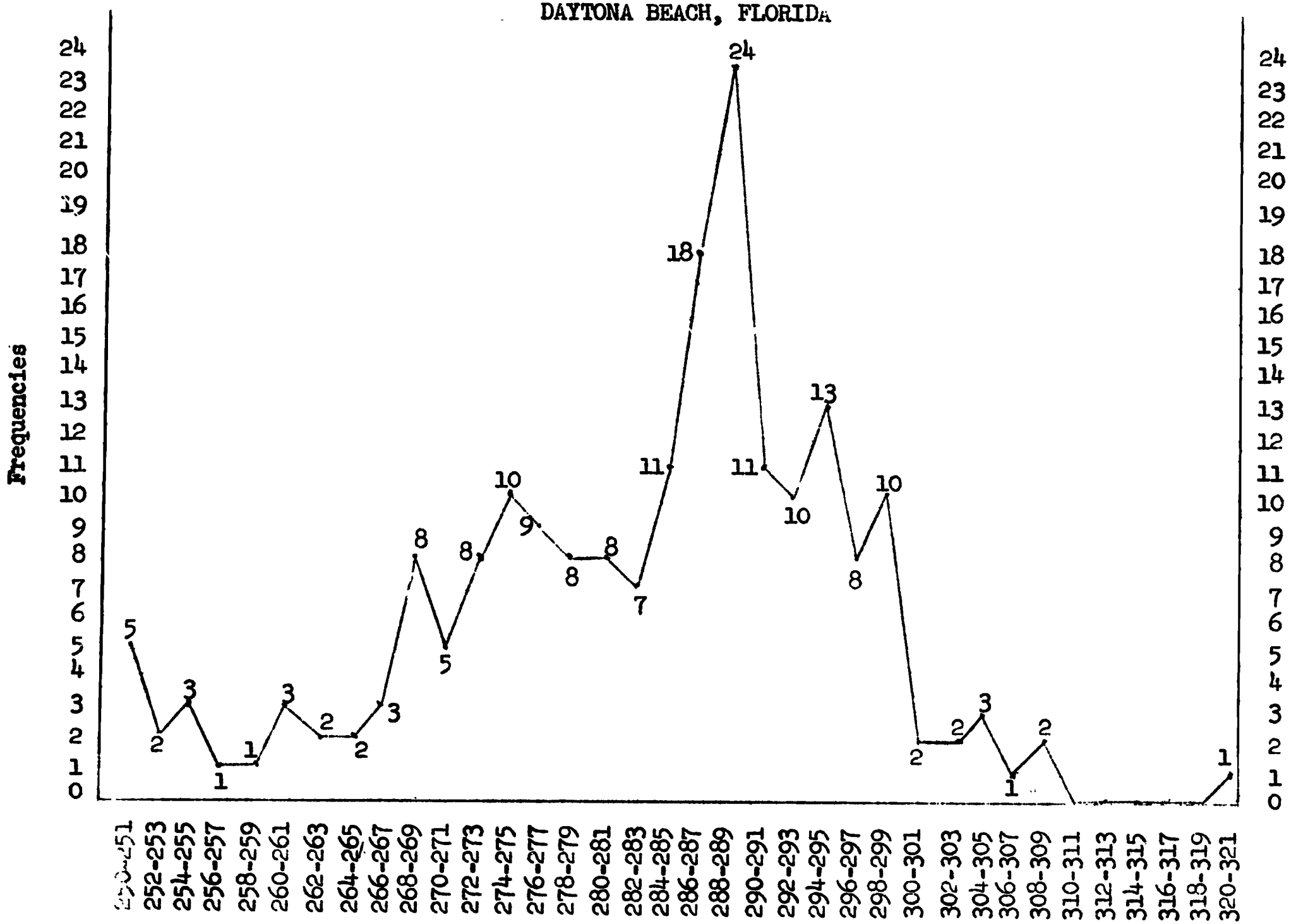
$$S \text{ or } S.D. = \sqrt{166.83} = 12.9$$

$$Q_1 \text{ or } P_{25} = 272 + \left(\frac{7}{10} \times 2\right) = 273.4$$

$$Q_3 \text{ or } P_{75} = 290 + \left(\frac{15}{10} \times \frac{1}{10} \times 2\right) = 290.3$$

$$\text{Semi-interquartile range} = Q = \frac{290.3 - 273.4}{2} = \frac{16.9}{2} = 8.45$$

Fig. 1. LINE GRAPH OF THE FREQUENCY DISTRIBUTION OF CONVERTED SCAT VERBAL SCORES OBTAINED BY 201 ENTERING COLLEGE FRESHMEN WHO TOOK AT LEAST ONE COURSE IN GUIDED STUDIES, FALL, 1966, DAYTONA BEACH JUNIOR COLLEGE DAYTONA BEACH, FLORIDA



Tables I through V contain test data obtained from 201 students enrolled in at least one Guided Studies course at Daytona Beach Junior College, Daytona Beach, Florida, Fall, 1966. The following tests were administered: School College Ability Test (SCAT), Level 1, Sequential Test of Educational Progress (STEP), Level 1, Reading, and the Sequential Test of Educational Progress, Level 1, Writing. Among other factors each table contains frequency distributions, local percentiles and percentile bands, and national percentile bands for the obtained converted scores. Below each table are the following statistical measures: mean, standard error of the mean, median, mode, variance, standard deviation, upper and lower quartiles (Q_1 and Q_3) and the semi-interquartile range. Each table is followed by a frequency polygon of the scores in the preceding table.

Table I is a compilation of data derived from the SCAT Verbal scores obtained from the sample involved in the study. This data reveal that as a group the students enrolled in Guided Studies at Daytona Beach Junior College, Daytona Beach, Florida, Fall, 1966, performed at a much lower level than the national norm group. However, there were some individuals who were better in performance than the average of the national norm.

The mean for the class was 283.1; its standard error was 0.911 which shows that the true mean for the local sample was between 282.2 and 284.01. The local median, 284.5, has a local percentile band of 36-62, but the national percentile band for this score is only 17-34. Since these two confidence bands do not overlap, we can say that there is a statistically significant difference in the performance of these two groups on SCAT Verbal, and that in this case, it is in favor of the national group since the class has the lower of the confidence bands (Table I). The crude mode (local) is 288.5; it has a national percentile band of 24-43, but the percentile band

for the local norm is 45-76. This again supports the thesis that as a group the class' performance is significantly below that of the national norm. Twenty-four or about 11.94% of the local examinees scored in the interval 288-289, the crude mode.

Although these measures of central tendency, the mean, median, and mode, are not exactly at the same point on the curve, these percentile bands overlap (Table I). Therefore, they do not differ importantly one from the other. This suggests, then, that this distribution of scores does approximate a normal curve. Figure 1 also lends support to this observation. Of course, this figure does show some skewness toward the right indicating more lower scores than high.

It is noted from Table I that 159 or more than 79% of the 201 examinees scored below 295, the national median, and that 114 of the students or slightly over 56.7% scored below 286, the first quartile (Q_1). However, there were a few, seven, or approximately 3.5% who scored at or within the upper quartile (Q_3).

The lowest score was 250 with a percentile band of 0-1 on the class scale and no percentile band on the national scale. There were five or approximately 2.5% of students who fell in this category on SCAT Verbal. It may be said that these five students could not be measured by the instrument used, and that their performance was as though it were blind guessing. The highest score obtained was 321. One student or about .5% of the sample made a score this high. The local confidence band for this score is 99-100 and the national is 93-96. The range of performance, 250-321, suggests that there is a wide spread in academic abilities in verbal skills among these students.

The standard deviation, 12.9, being less affected than the range by

extreme scores gives a less distorted picture of the variability within this distribution. One standard deviation ± the mean, 283.1, includes a spread of a 137 score or approximately 68% of the distribution. This spread extends from scores 270-296.

The semi-interquartile range (8.45) ± the median accounts for 106 or 52.2% of the scores. The extremes of the spread are from 270.05 to 292.95. Because over 50% of the scores fall within these limits (though not much over) the distribution shows a little skewness.

Perhaps the reader can get a more precise picture from the capsule comparison of the local and national medians, and lower and upper quartiles given in the summary table below. The local mean and mode are also shown. Only national percentile bands are used.

Table I_a

Test	Local		National	
SCAT Verbal	Converted Scores	Percentile Bands	Converted Scores	Percentile Bands
Median	284.5	17-34	295	37-60
Lower Quartile	273.4	6-16	286	20-40
Upper Quartile	290.3	28-49	305	66-83
Mean	283.1	15-31	---	-----
Mode	288.5	24-43	---	-----

From the above chart it may be noted that in each of the comparisons, the national score is significantly better than the local score since their comparative percentile bands do not overlap. Some negative skewness is also shown because the mean is smaller than the median and Q_2-Q_1 is larger than Q_3-Q_2.

Table 2

SCAT QUANTITATIVE SCORES (Level 1) OBTAINED BY 201 ENTERING FRESHMEN STUDENTS WHO TOOK ONE OR MORE COURSES IN GUIDED STUDIES AT DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA FALL, 1966

Steps	X	F	CF	FX	U	FU	FU^2	Class Norm %ile R	Class %ile Band	National %ile Band
336-337	336.5	1	201	336.5	24	24	576	99	99-100	99-99.7
334-335	334.5	0	200	000.0	23	0	000	99	99-100	97-99.5
332-333	332.5	0	200	000.0	22	0	000	99	99-99	94-99.2
330-331	330.5	0	200	000.0	21	0	000	99	99-99	92-99
328-329	328.5	0	200	000.0	20	0	000	99	99-99	90-98
326-327	326.5	0	200	000.0	19	0	000	99	99-99	88-96
324-325	324.5	0	200	000.0	18	0	000	99	98-99	85-94
322-323	322.5	0	200	000.0	17	0	000	99	97-99	82-92
320-321	320.5	4	200	1282.0	16	64	1024	98	95-99	74-91
318-319	318.5	1	196	318.5	15	15	225	97	93-99	71-90
316-317	316.5	5	195	1582.5	14	70	980	95	92-98	68-87
314-315	314.5	4	190	1258.0	13	52	676	93	91-97	63-84
312-313	312.5	1	186	312.5	12	12	144	92	88-95	60-80
310-311	310.5	3	185	931.5	11	33	363	91	85-93	55-74
308-309	308.5	8	182	2468.0	10	80	800	88	82-92	48-71
306-307	306.5	5	174	1532.5	9	45	405	85	79-91	45-68
304-305	304.5	5	169	1522.5	8	40	320	82	76-88	41-63
302-303	302.5	7	164	2117.5	7	40	343	79	71-85	37-60
300-301	300.5	6	157	1803.0	6	36	216	76	65-82	33-55
298-299	298.5	14	151	4179.0	5	70	350	71	60-79	29-48
296-297	296.5	11	137	3261.5	4	44	176	65	55-76	25-45
294-295	294.5	9	126	2650.5	3	27	81	60	49-71	20-43
292-293	292.5	12	117	3510.0	2	24	48	55	43-63	17-39
290-291	290.5	12	105	3486.0	1	12	12	49	37-60	15-35
288-289	288.5	12	93	3462.0	0	0	00	43	33-55	14-31
286-287	286.5	11	81	3151.5	-1	-11	11	37	30-49	13-27
284-285	284.5	5	70	1422.5	-2	-10	20	33	28-43	11-23
282-283	282.5	6	65	1695.0	-3	-18	54	30	24-37	10-20
280-281	280.5	5	59	1402.5	-4	-20	80	28	21-33	9-17
278-279	278.5		54	2228.0	-5	-40	200	24	18-30	8-15
276-277	276.5	7	46	1935.5	-6	-42	252	21	16-28	7-14
274-275	274.5	5	39	1372.5	-7	-35	245	18	14-24	6-12
272-273	272.5	3	34	817.5	-8	-24	192	16	11-21	5-10
270-271	270.5	5	31	1352.5	-9	-45	405	14	9-18	4-9
268-269	268.5	5	26	1342.5	-10	-50	500	11	8-16	3-8
266-267	266.5	4	31	1066.8	-11	-44	484	9	7-14	2-7
264-265	264.5	1	17	264.5	-12	-12	144	8	5-11	1-6
262-263	262.5	3	16	787.5	-13	-39	507	7	3-9	0.8-5
260-261	260.5	4	13	1042.0	-14	-56	784	5	1.5-8	0.5-4
258-259	258.5	4	9	1034.0	-15	-60	900	3	.5-7	0-3

Table 2 (cont'd)

256-257	256.5	2	5	513.0	-16	-32	512	.2	0.9-5	0-2
254-255	254.5	0	3	0	-17	-0	000	1.5	0.5	0-1
252-253	252.5	2	1	505.0	-18	-36	648	.9	.9	0-0
000-000	000.0	1	1	000.0	-19	-19	361	.5	0-.5	0-0
				57946.8	+110	+95	13038			

N = 201 i = 2

Measures of Central Tendency:

$$Mdn = 288 + \left(\frac{75}{10} \times \frac{1}{12} \times \frac{2}{1}\right) = 289.25$$

Mode = 298.5

$$M = \frac{\Sigma FX}{N} = \frac{57941.4}{201} = 288.2$$

$$S.E_m = \frac{S.D.}{\sqrt{N}} = \frac{15.98}{\sqrt{201}} = 1.13$$

Measures of Variability:

$$\text{Variance: } s^2 = i^2\left[\frac{\Sigma FU^2}{N} - \left(\frac{\Sigma FU}{N}\right)^2\right] =$$

$$= 4\left[\frac{13038}{201} - \left(\frac{104}{201}\right)^2 = \left[64 - \left(0.48\right)^2\right] = 255.73\right.$$

$$S \text{ or } SD = \sqrt{s^2} = \sqrt{255.73} = 15.98$$

$$Q_1 \text{ or } P_{25} = 276 - \left(\frac{425}{100} \times \frac{1}{7} \times \frac{2}{1}\right) = 277.2$$

$$Q_3 \text{ or } P_{75} = 296 + \left(\frac{13.75}{100} \times \frac{1}{14} \times \frac{2}{1}\right) = 297.8$$

$$\text{Semi-interquartile range} = Q = \frac{Q_3 - Q_1}{2} = \frac{297.8 - 277.2}{2} = 10.37$$

Fig. 2. LINE GRAPH OF THE FREQUENCY DISTRIBUTION OF CONVERTED SCAT QUANTITATIVE SCORES OBTAINED BY 201 ENTERING COLLEGE FRESHMEN WHO TOOK AT LEAST ONE COURSE IN GUIDED STUDIES, FALL, 1966, DAYTONA BEACH JUNIOR COLLEGE DAYTONA BEACH, FLORIDA

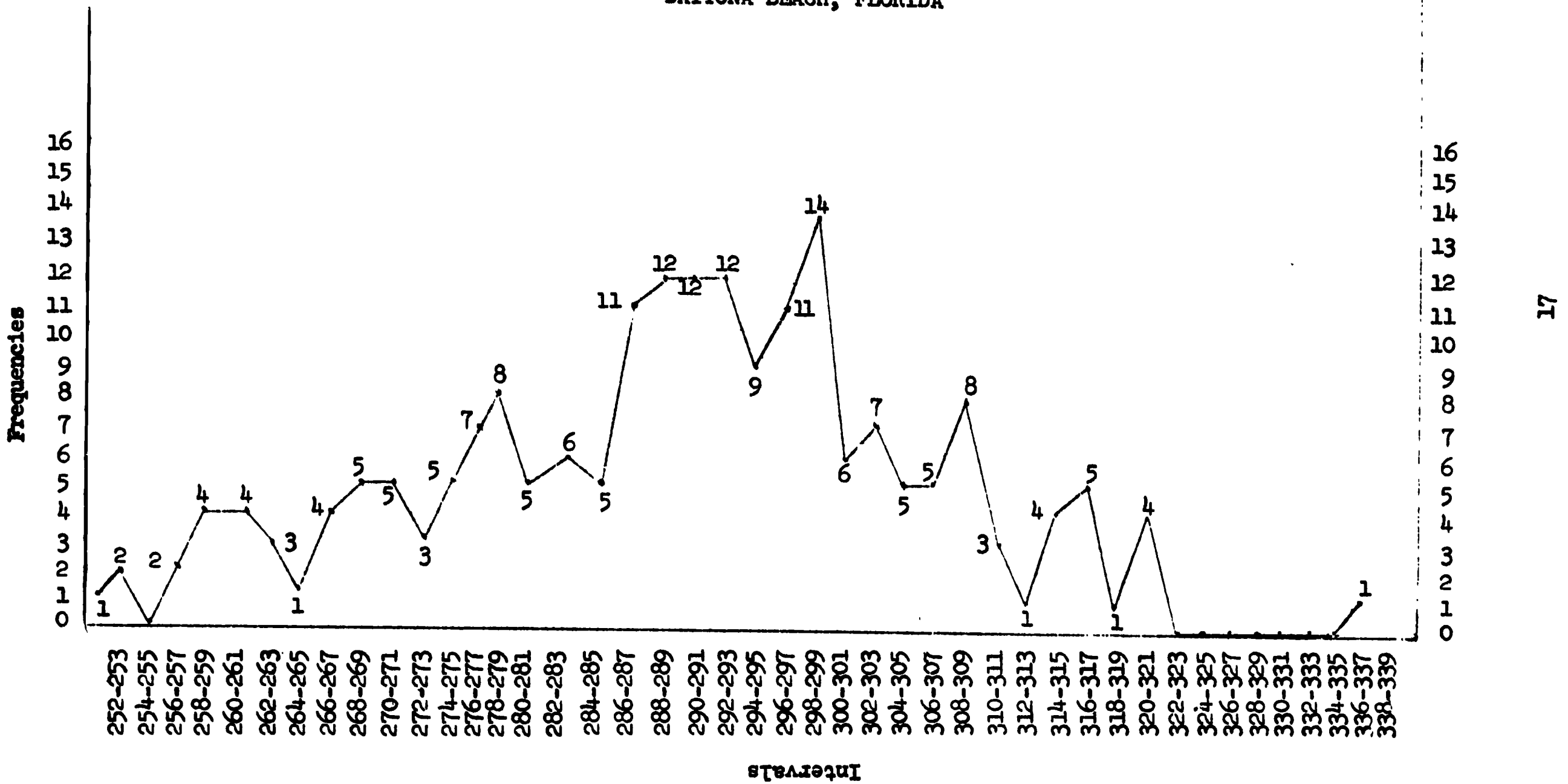


Table II contains statistical data derived from test scores earned by the sample group under study on the School College Ability Test, Level 1, Quantitative items. On this part of the test, as on the Verbal items, the local group performed less well than the national. However, there are a few who were as good as the average in the norm group. There was one who did as well on quantitative skills as any member of the national sample. On the other hand, one member of the class performed so poorly that he could not be measured on quantitative skills by this instrument.

The class mean, 288.2, has a standard error of 1.13 which suggests that the true mean lies between 287.07 and 289.33--a relatively narrow range even though it is greater than the confidence band for SCAT Verbal. The local median, 289.25, has a national percentile band of 14-31, and a local band of 33-55, thus indicating a real statistical difference between the performance of these two groups. One may readily note that these levels do not touch nor overlap. The mode, a third measure of central tendency, is 298.5 and has a national percentile band of 29-48 and one of 60-79 on the local scale. Here again there is a substantial difference between local and national percentile bands for the same converted score. Of course, the difference in average performance for the two groups is in favor of the national group.

Although these three measures of central tendency, the mean, median, and mode, are numerically different, their statistical difference is insignificant. One notes that the mean and median are almost at the same points.

However, there is a real difference between the national median, 305, and the class median, 288.2 because their percentile bands do not overlap

(Table II). There is a preponderance of low scores on SCAT Quantitative, although not as many as there are on SCAT Verbal. One hundred sixty-eight or 83.58% of the students were below the national median, 305, on SCAT Quantitative, but there were 33 or 16.42% of the examiness at or above the national median; 106 or approximately 52.24% scored below the national lower quartile, 292; while 95 or 47.76% scored above. Seven or slightly more than 5.7% were at or within the national upper quartile, 316. At least one student or 0.5% of the sample performed as well as any individual in the norm group obtaining a converted score of 336, the percentile band for which is 99-99.7 on the national scale and 99-100 on the local. On the other hand, one student performed so poorly that he could not be found on the national scale.

The measures of variability reveal less homogeneity within the Quantitative distribution than was true of the SCAT Verbal. The range is from 000-336. The standard deviation, 15.98± the mean, 288.2, includes a spread of 138 scores or nearly 68.28% of the sample; the semi-interquartile range, 10.37, the median extends downward to 279.13 and upward to 299.87 taking in 111 or 55.2% of the scores. This, of course, indicates some deviation from normal symmetry. The difference between Q_3-Q_2 is smaller than that between Q_2-Q_1, thus showing negative skewness. These measures of variability suggest and Figure 2 reveals a skewed distribution with broad shoulders, several peaks, and scores ranging from 000-336.

To compare more concisely the performance of the two groups, local and national, a summary table is given below which includes their medians and lower and upper quartiles (Q_1 and Q_3). The mean and mode are also included for the local group.

Table II_a

Test	Local		National	
SCAT Quantitative	Converted Scores	Percentile Bands	Converted Scores	Percentile Bands
Median	289.25	14-31	305	41-63
Lower Quartile	277.2	6-12	292	17-39
Upper Quartile	297.98	29-48	316	68-87
Mean	288.2	14-31	---	-----
Mode	298.2	29-48	---	-----

Table II_a reveals that the national group's performance on this test was significantly better than that of the class; for in no instance do their corresponding confidence bands overlap. The chart also shows that the distribution is skewed, since the difference between Q_2-Q_1 is not identical with that between Q_3-Q_2. Not only that, but negative distortion can be detected from the above table.

Table 3

SCAT TOTAL SCORES (Level 1) OBTAINED BY 201 ENTERING FRESHMEN STUDENTS WHO TOOK ONE OR MORE COURSES IN GUIDED STUDIES AT DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA FALL, 1966

Steps	X	F	CF	FX	U	FU^2	FU	Class Norm %ile R	Class %ile Band	National %ile Band
310-311	310.5	1	201	310.5	15	225	15	99	98-100	80-87
308-309	308.5	1	200	308.5	14	196	14	99	96-100	74-84
306-307	306.5	3	199	919.5	13	507	39	98	93-99	68-80
304-305	304.5	5	196	1522.5	12	720	60	96	91-99	62-74
302-303	302.5	6	191	1815.0	11	726	66	93	88-98	55-68
300-301	300.5	3	185	901.5	10	300	30	91	84-96	48-62
298-299	298.5	7	182	2089.5	9	567	63	88	77-93	42-55
296-297	296.5	11	175	3261.5	8	704	88	84	70-91	37-48
294-295	294.5	16	164	4712.0	7	784	133	77	60-88	32-42
292-293	292.5	14	148	4095.0	6	504	70	70	51-84	28-37
290-291	290.5	23	134	6681.5	5	575	11.5	60	45-77	24-32
288-289	288.5	15	111	4327.5	4	240	60	51	39-70	20-28
286-287	286.5	10	96	2865.0	3	90	30	45	32-60	16-24
284-285	284.5	14	86	3983.0	2	56	28	39	28-51	14-20
282-283	282.5	12	72	3390.0	1	12	12	32	23-45	9-18
280-281	280.5	7	60	1963.5	0	0	0	28	18-39	8-15
278-279	278.5	13	53	3620.5	-1	13	-13	23	16-32	7-12
276-277	276.5	6	40	1659.0	-2	24	-12	18	14-28	6-9
274-275	274.5	2	34	549.0	-3	18	-6	16	12-23	5-8
272-273	272.5	5	32	1362.5	-4	80	-20	14	10-18	4-7
270-271	270.5	3	27	811.5	-5	75	-15	12	9-16	3-6
268-269	268.5	5	24	1342.5	-6	180	-30	10	8-14	2-5
266-267	266.5	0	19	000.0	-7	0	-00	9	7-12	1-4
264-265	264.5	2	19	529.0	-8	128	-16	8	6-10	0.8-3
262-263	262.5	4	17	1050.0	-9	324	-36	7	5-9	0.5-2
260-261	260.5	0	13	000.0	-10	0	-00	6	4-8	0-1
258-259	258.5	3	13	775.5	-11	363	-33	5	3-7	0-0.8
256-257	256.5	2	10	513.0	-12	288	-24	4	2-6	0-0.5
254-255	254.5	2	8	509.0	-13	138	-26	3	1-5	0-0
252-253	252.5	0	6	505.0	-14	0	-00	2	0-4	0-0
000-000	000.0	6	6	000.0	-15	135.0	-90	1	0-3	0-0
				56372.5	0	9187	502			

N = 201 i = 2

Measures of Central Tendency:

$$Mdn = 286 + \left(\frac{45}{10} \times \frac{1}{15} \times \frac{2}{1}\right) = 286.60$$

Mode = 290.50

$$M = \frac{\Sigma FX}{N} = \frac{56372.5}{201} = 280.44$$

$$S.E_m = \frac{S.D.}{\sqrt{N}} = \frac{12.56}{\sqrt{201}} = .885$$

Measures of Variability:

$$\text{Variance: } s^2 = i^2 \left[\frac{\Sigma FU^2}{N} - \left(\frac{\Sigma FU}{N}\right)^2\right] = 4\left[\frac{8187}{201} - \left(\frac{34}{201}\right)^2\right] = 157.8$$

$$S \text{ or } S.D. = \sqrt{s^2} = \sqrt{157.8} = 12.57$$

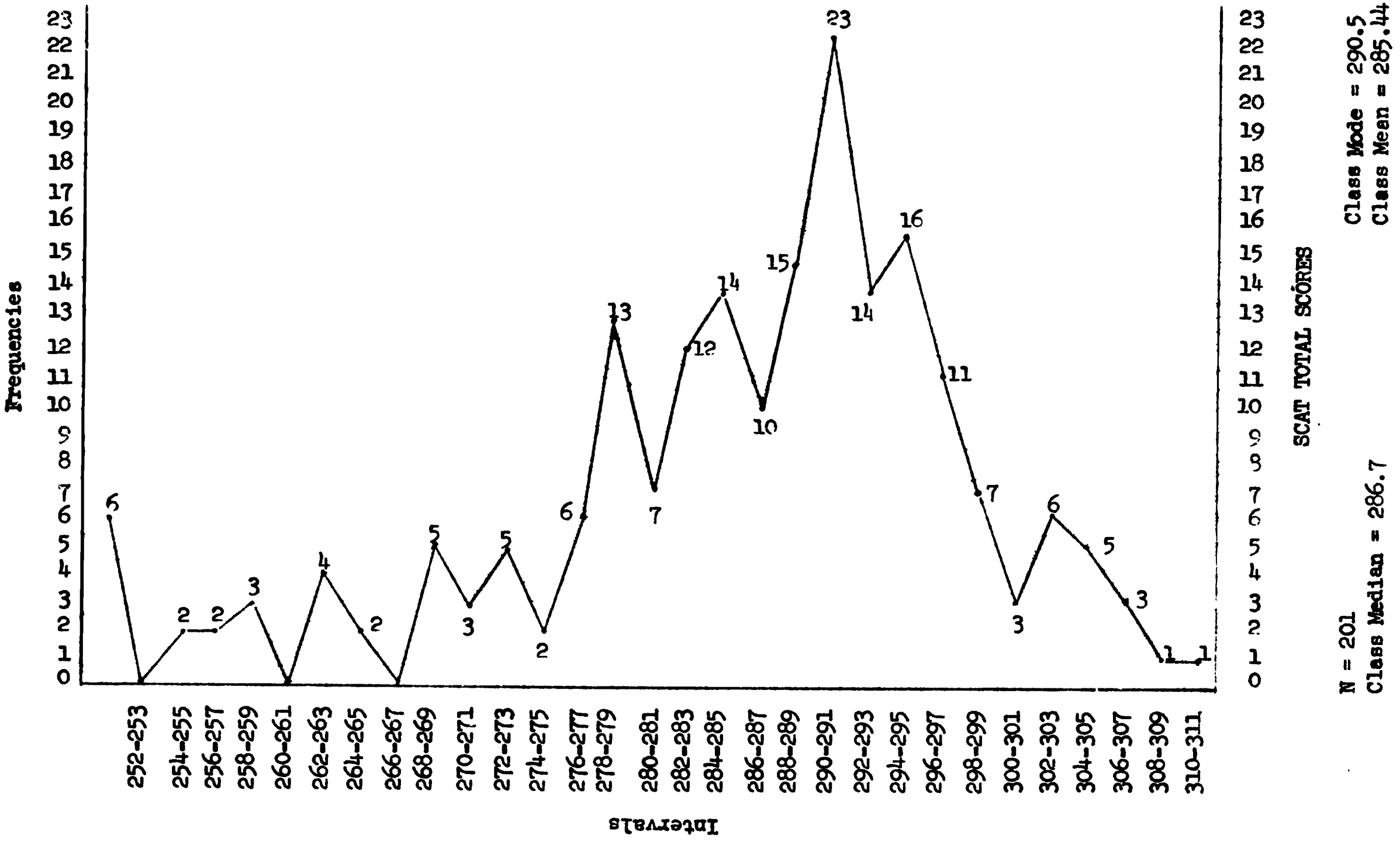
$$Q_1 \text{ or } P_{25} = 276 + \frac{1025}{100} \quad \frac{1}{13} \times \frac{2}{1} = 277.68$$

$$Q_3 \text{ or } P_{75} = 292 + \left(\frac{25}{10} \quad \frac{1}{14} \times \frac{2}{1}\right) = 292.38$$

$$\text{Semi-interquartile range} = Q = \frac{Q_3 - Q_1}{2} = \frac{292.38 - 277.68}{2} = 7.37$$

Fig. 3. LINE GRAPH OF THE FREQUENCY DISTRIBUTION OF CONVERTED SCAT TOTAL SCORES OBTAINED BY 201 ENTERING COLLEGE FRESHMEN WHO TOOK AT LEAST ONE COURSE IN GUIDED STUDIES, FALL, 1966, DAYTONA BEACH JUNIOR COLLEGE DAYTONA BEACH, FLORIDA

Level 1



Class Mode = 290.5
Class Mean = 285.44

N = 201
Class Median = 286.7

Table III contains data derived from the SCAT Total scores obtained by the 201 freshmen who participated in at least one course in Guided Studies at Daytona Beach Junior College, Daytona Beach, Florida, Fall, 1966. This table has the same kind of information as the preceding ones. For the most part, the data depict a picture very similar to those revealed by the former tables and graphs.

The standard error, 0.885, of the mean, 280.44, indicates that the real mean lies between 279.56 and 281.33, a rather narrow band. The local median, 286.6, has a percentile band of 32-60 on the local scale and 16-24 on the national scale. The national median, 300, has a local percentile band of 84-96; while on the national scale it is 48-62. It may be seen that these bands do not overlap, therefore, there is a significant difference between these medians. The lower quartile, P_{25}, national, is 290--percentile band 24-32 on the class scale; while the band is 45-77 on the local. Again, there is no touching or overlapping of the bands, hence a real difference between these medians. The class mode, 290.5, has a local percentile band of 24-32. In each case the percentile bands of the local measures of central tendency overlap, therefore, they do not differ significantly from each other. The local median, 286.6, is substantially less than the national median, 300. By inspection of Table III, one finds that 182 or 90.05% of the class members scored below the national median, that 19 or 9.95% were above; that 5 or approximately 2.5% were at or above national upper quartile, 307, and that 196 or 97.5% were below. Now, 134 or 66.6% of the class obtained scores lower than the national first quartile, 290, but 67 or 33.4% of them performed better than the lower quartile of the national norming group.

From observation of Figure 3, and from an examination of the statistical measures appearing at the bottom of Table III, it can be detected

that this distribution is negatively skewed for three reasons. Firstly, the difference between Q_2 and Q_1 is greater than that between Q_3 and Q_2; secondly, less than 68% of the distribution lies within 1 standard deviation, 12.5, above and below the mean, 280.44; and thirdly, over 50% of the scores lie within the semi-interquartile range, 7.35, plus and minus the median. Within the semi-interquartile range, 7.35, plus and minus the median 286.67 there are 109 or 54.4% of the scores; and included in the spread 1 s.d. above and below the mean are 129 or64.18% of the scores, all of which indicate distortion. And finally, Figure 3 shows a multimodal distribution.

The table below may give the reader a clearer picture of the distribution of SCAT Total Scores. Only corresponding national percentile bands are used for the converted scores. In addition to local and national medians and local and national lower and upper quartiles, the local mean and mode are also shown.

Table III_a

Test	Local		National	
SCAT Total	Converted Scores	Percentile Bands	Converted Scores	Percentile Bands
Median	286.6	16-24	300	48-62
Lower Quartile	277.68	7-12	290	24-32
Upper Quartile	292.38	28-37	307	68-60
Mode	290.50	24-32	---	-----
Mean	280.44	8-15	---	-----

The data in the above table point out that the local group performed significantly poorer than did the national sample because none of the corresponding confidence bands overlap. The table also makes it clear that

the distribution is skewed negatively because the mean is importantly smaller than the median and because the difference between Q_2-Q_1 is larger than that between Q_3-Q_2.

Although the above data reveal that as a group the students in Guided Studies as a whole performed at a much lower level than the norm sample, it also showed that there were individuals within the class who performed as well or better than the average in the national sample. Furthermore, in a few cases the students in Guided Studies did as well as the best performers of the national group. Charts I_a and II_a, however, show that the class significantly performed no better in Verbal than in Quantitative skills.

Now, if the School College Ability Test, Level 1, is a reliable predictor of college success, it appears that the majority of students who enrolle in Guided Studies were, at the time this instrument was administered, not equipped with the academic skills to do satisfactory work in an academically oriented college program.

Table 4

STEP WRITING SCORES (Level 1) OBTAINED BY 201 ENTERING FRESHMEN STUDENTS WHO TOOK ONE OR MORE COURSES IN GUIDED STUDIES AT DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA FALL, 1966

Steps	X	F	CF	FX	U	FU	FU^2	Class Norm %ile R	Class %ile Band	National %ile Band
314-315	314.5	2	201	629.0	15	34	578	99	98-100	76-96
312-313	312.5	1	199	312.5	14	14	196	98	97-100	72-94
310-311	310.5	0	198	000.0	13	0	0	98	96-99	64-92
308-309	308.5	3	198	925.5	12	36	432	97	94-98	59-90
306-307	306.5	4	195	1226.0	11	44	484	96	93-98	57-89
304-305	304.5	2	191	609.0	10	20	200	94	91-97	46-86
302-303	302.5	4	189	1210.0	9	36	324	93	89-96	40-81
300-301	300.5	3	185	901.5	8	24	192	91	87-94	36-76
298-299	298.5	3	182	895.5	7	21	147	89	84-93	33-72
296-297	296.5	6	179	1779.0	6	36	216	87	80-91	31-64
294-295	294.5	7	173	2061.5	5	35	175	84	75-89	26-59
292-293	292.5	10	166	2925.0	4	40	160	80	68-87	25-57
290-291	291.5	9	157	2623.5	3	27	81	75	59-84	17-46
288-289	288.5	18	147	5193.0	2	36	72	68	50-80	14-38
286-287	286.5	20	129	5730.0	1	20	20	59	42-75	11-34
284-285	284.5	17	109	4836.5	0	-0	0	50	34-68	10-32
282-283	282.5	15	92	4231.5	-1	-15	15	42	28-59	9-28
280-281	280.5	14	77	3927.0	-2	-28	56	34	24-50	8-25
278-279	278.5	11	63	3063.5	-3	-33	99	28	22-42	7-23
276-277	276.5	6	52	1659.0	-4	-24	96	24	19-34	6-21
274-275	274.5	2	46	549.0	-5	-10	50	22	14-28	5-14
272-273	272.5	10	44	2725.0	-6	-60	360	19	11-24	4-11
270-271	270.5	8	34	2164.0	-7	-56	392	14	8-22	3-10
268-269	268.5	5	26	1342.5	-8	-40	320	11	6-19	2-9
266-267	266.5	6	21	1599.0	-9	-54	486	8	4-14	1-8
264-265	264.5	3	15	793.5	-10	-30	300	6	2-11	0.9-7
262-263	262.5	5	12	1312.5	-11	-55	605	4	2-8	0.7-6
260-261	260.5	2	7	521.0	-12	-24	288	2	1-6	0.5-5
258-259	258.5	1	5	258.5	-13	-13	169	2	1-4	0-4
256-257	256.5	2	4	513.0	-14	-28	392	1	1-2	0-3
254-255	254.5	0	2	000.0	-15	-0	0	1	1-2	0-2
252-253	252.5	0	2	000.0	-16	-0	0	1	0-1	0-0
250-251	250.5	2	2	501.0	-17	-30	450	1	0-1	0-0
				57023.5	-33	-77	7355			

N = 201 i = 2

Measures of Central Tendency:

$$Mdn = 282 + \left(\frac{85}{10} \times \frac{1}{17} \times \frac{2}{1}\right) = 283$$

$$Mode = 286.5$$

$$M = \frac{\Sigma FX}{N} = \frac{57023.5}{201} = 283.6$$

$$S.E_m = \frac{S.D.}{\sqrt{N}} = \frac{11.98}{14177} = 0.844$$

Measures of Variability:

$$\text{Variance: } s^2 = i^2\left[\frac{\Sigma FU^2}{N} - \left(\frac{\Sigma FU}{N}\right)^2\right] = 143.44$$

$$S \text{ or } S.D. = \sqrt{s^2} = \sqrt{143.44} = 11.98$$

$$Q_1 \text{ or } P_{25} = 274 + \left(\frac{45}{10} \times \frac{1}{6} \times \frac{2}{1}\right) = 275.5$$

$$Q_3 \text{ or } P_{75} = 288 + \left(\frac{3.5}{10} \times \frac{1}{9} \times 2\right) = 288.8$$

$$\text{Semi-interquartile range} = Q = \frac{Q_3 - Q_1}{2} \quad \frac{288.8 - 275.5}{2} = 6.7$$

Fig. 4. LINE GRAPH OF THE FREQUENCY DISTRIBUTION OF CONVERTED STEP WRITING SCORES OBTAINED BY 201 ENTERING COLLEGE FRESHMEN WHO TOOK AT LEAST ONE COURSE IN GUIDED STUDIES, FALL, 1966, DAYTONA BEACH JUNIOR COLLEGE DAYTONA BEACH, FLORIDA

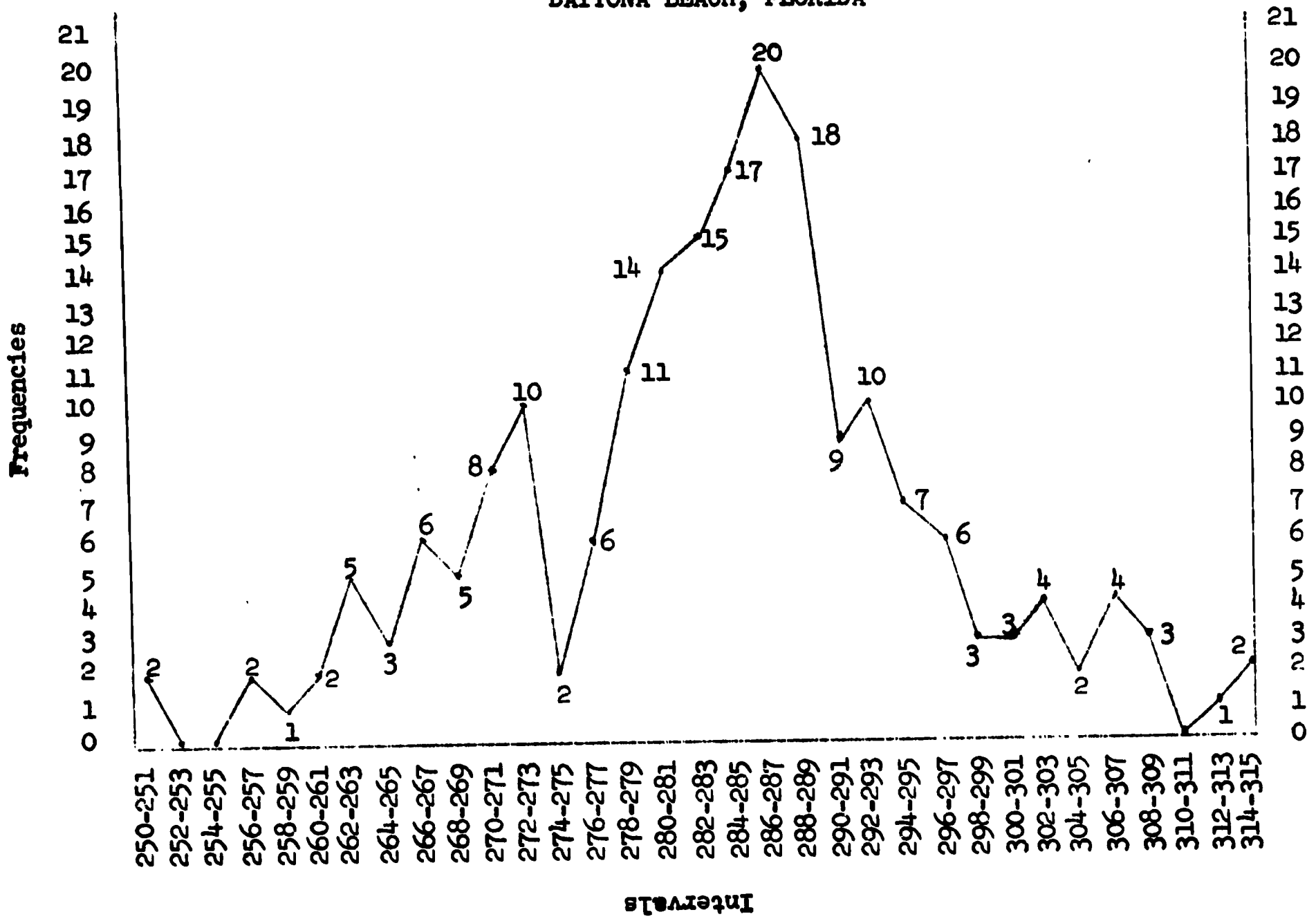


Table IV contains data derived from Sequential Test of Educational Progress Writing, Level 1, scores obtained by 201 students being investigated in this part of the study. Here again, the local group, as a whole, did less well than did the national sample, but there were individuals who were better than the average in the norm group. Twenty-two or more than 10.9% of the class were at or above the national median; ten or slightly more than 5% were at or within the national upper quartile. There were 92 or 45.8% of the local class whose confidence bands overlapped the median confidence bands of the norm group. Of course there were 109 or 54.2% whose scores were less than the lower quartile (286) of the national sample. One hundred seventy-nine or 89.05% scored below the national median (298). Five members of the class performed as well by blind guessing because their scores did not vary importantly from zero.

The mean for this set of scores is 283.6 with a standard error of 0.844. The class median is 285; while the mode is 286.5. These measures of central tendency differ slightly numerically one from the other, but their differences are not statistically important because their percentile bands overlap.

The standard deviation plus and minus the mean include a dispersion of 139 scores or a little more than 68% of the distribution. The spread, 1 standard deviation above and below the mean, extends downward to score point 271.92 and upward to score point 295.58. The semi-interquartile range (7.1) plus and minus the median (285) extends downward to 277.9 and upward to 292.1 including approximately 114 scores or slightly over 56.72% of the local sample. Now, there is some abnormality in this spread, but the distribution tends to conform to a normal curve, as may be noted in Figure 4. The information just cited says that low average for the class extends downward to percentile band 7-23, and high average

extends upward to percentile band 25-57 on the national scale, Table IV. It also says that high average for the class is above the lower quartile and below the national median or second quartile.

The summary table below may give a clearer picture of the comparison of the performance of the local and national group on STEP Writing. The table includes local and national medians, lower and upper quartiles and their corresponding percentile bands. Only national percentile bands are used. The mean and mode for the local group are also shown.

Table IV_a

Test	Local		National	
STEP Writing	Converted Scores	Percentile Bands	Converted Scores	Percentile Bands
Median	285	10-32	298	33-72
Lower Quartile	276.5	6-21	286	11-34
Upper Quartile	290.7	17-46	307	57-89
Mean	283.6	10-32	---	-----
Mode	286.5	11-34	---	-----

The above table reveals some negative distortion in the distribution because the mean is numerically smaller than the median; second, because Q_2-Q_1 is larger than Q_3-Q_2; third, because the mean, median and mode are not located at the same point on the curve. The table also shows that the median and upper quartiles for the local group are importantly smaller than those for the national sample, but in this distribution of scores (STEP Writing) it is found that there is no significant difference between the lower quartile for the local and national groups.

Table 5

STEP READING (Level 1) OBTAINED BY 201 ENTERING FRESHMEN STUDENTS WHO TOOK ONE OR MORE COURSES IN GUIDED STUDIES AT DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA FALL, 1966

Steps	X	F	CF	FX	U	FU	FU^2	Class Norm %ile R	Class %ile Band	National %ile Band
320-321	320.5	2	201	641.0	19	38	722	99	98-100	70-89
318-319	318.5	1	199	318.5	18	18	324	98	96-100	64-87
316-317	316.5	2	198	633.0	17	34	578	98	95-99	60-84
314-315	314.5	4	196	1258.0	16	64	1024	96	94-98	51-81
312-313	312.5	1	192	312.5	15	15	225	95	94-98	44-79
310-311	310.5	1	191	310.5	14	14	196	94	92-96	36-77
308-309	308.5	2	190	617.0	13	26	338	94	90-95	30-70
306-307	306.5	4	188	1226.0	12	48	576	92	88-94	27-62
304-305	304.5	5	184	1522.5	11	55	605	90	82-94	24-59
302-303	302.5	3	179	907.5	10	30	300	88	73-92	21-48
300-301	300.5	22	176	6611.0	9	198	1782	82	67-90	20-36
298-299	298.5	13	154	3880.5	8	104	832	73	57-88	15-30
296-297	296.5	12	141	3558.0	7	84	588	67	47-82	10-25
294-295	294.5	26	129	7657.0	6	156	936	57	42-73	9-22
292-293	292.5	15	103	4387.5	5	75	375	47	37-67	8-20
290-291	290.5	7	88	2033.5	4	28	112	42	33-57	7-15
288-289	288.5	10	81	2885.0	3	30	90	37	28-47	6-12
286-287	286.5	9	71	2578.5	2	18	36	33	23-42	5-11
284-285	284.5	10	62	2845.0	1	10	10	28	19-37	4-10
282-283	282.5	9	52	2542.5	0	0	0	23	17-33	3-9
280-281	280.5	6	43	1683.0	-1	-6	6	19	15-28	2-8
278-279	278.5	4	37	1114.0	-2	-8	16	17	13-23	0-7
276-277	276.5	4	33	1106.0	-3	-12	36	15	11-19	0-6
274-275	274.5	4	29	1098.0	-4	-16	64	13	10-17	0-5
272-273	272.5	2	25	545.0	-5	-10	50	11	8-15	0-4
270-271	270.5	3	23	811.5	-6	-18	108	10	6-13	0-3
268-269	268.5	6	20	1611.0	-7	-42	294	8	5-11	0-2
266-267	266.5	2	14	533.0	-8	-16	128	6	4-10	0-1
264-265	264.5	1	12	529.0	-9	-9	81	5	4-8	0-0
262-263	262.5	2	11	525.0	-10	-20	200	4	4-6	0-0
260-261	260.5	1	9	260.5	-11	-11	121	4	4-4	0-0
258-259	258.5	0	8	000.0	-12	0	0	4	4-4	0-0
256-257	256.5	0	8	000.0	-13	0	0	4	4-4	0-0
254-255	254.5	0	8	000.0	-14	0	0	4	3-4	0-0
252-253	252.5	0	8	000.0	-15	0	0	4	3-4	0-0
250-251	250.5	1	8	2004.0	-16	-16	256	3	0-4	0-0
000-000	000.0	7	7	000.0	-17	-119	2023	3	0-3	0-0
				58545.0	37	742	13032			

$N = 201$ $i = 2$

Measures of Central Tendency:

$$Mdn = 290.0 + \left(\frac{125}{10} \times \frac{1}{15} \times 2\right) = 291.67$$

$$Mode = 294.5$$

$$Mean = \frac{\Sigma FX}{N} = \frac{58545.0}{201} = 291.2$$

$$S.E_m = \frac{S.D.}{\sqrt{N}} = 1.0$$

Measures of Variability

$$\text{Variance or } s_2 = i^2 \left[\frac{FX^2}{N} - \left(\frac{FU}{N}\right)^2\right] = 205.2$$

$$S \text{ or } S.D. = \sqrt{s^2} = \sqrt{205.2} = 14.2$$

$$Q_1 \text{ or } P_{25} = 280 + \left(\frac{725}{100} \times \frac{1}{9} \times \frac{2}{1}\right) = 281.7$$

$$Q_3 \text{ or } P_{75} = 296 + \left(\frac{975}{100} \times \frac{1}{13} \times 2\right) = \frac{1950}{1300} = 297.5$$

$$\text{Semi-interquartile Range} = Q = \frac{Q_3 - Q_1}{2} = \frac{297.5 - 281.7}{2} = 7.92$$

$$\text{Semi-interquartile Range (National Norm)} = \frac{305-286}{2} = 9.5$$

Fig. 5. LINE GRAPH OF THE FREQUENCY DISTRIBUTION OF CONVERTED STEP READING SCORES OBTAINED BY 201 ENGERING COLLEGE FRESHMEN WHO TOOK AT LEAST ONE COURSE IN GUIDED STUDIES, FALL, 1966, DAYTONA BEACH JUNIOR COLLEGE DAYTONA BEACH, FLORIDA

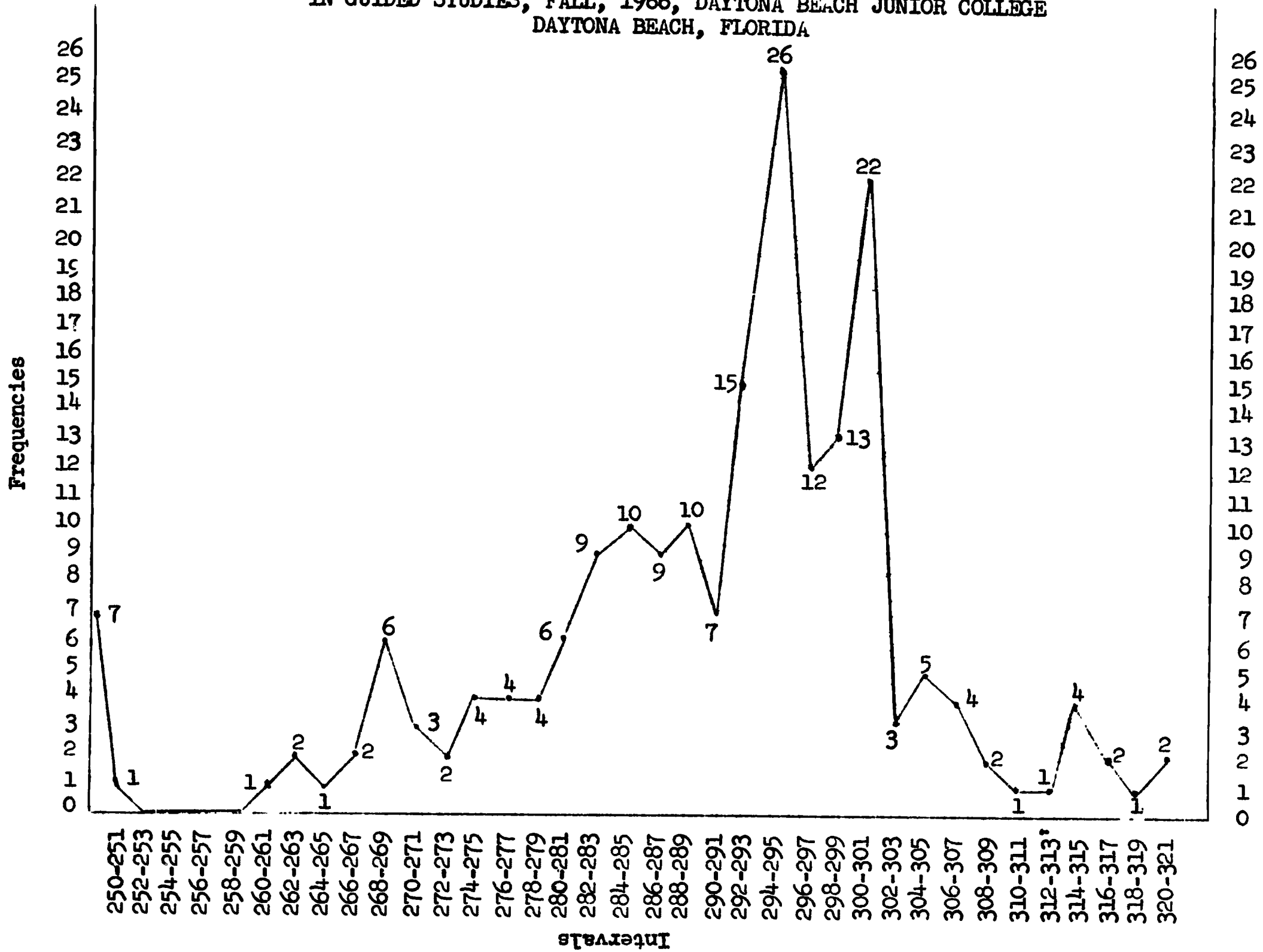


Fig. 6 STEP STUDENT PROFILE

SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS

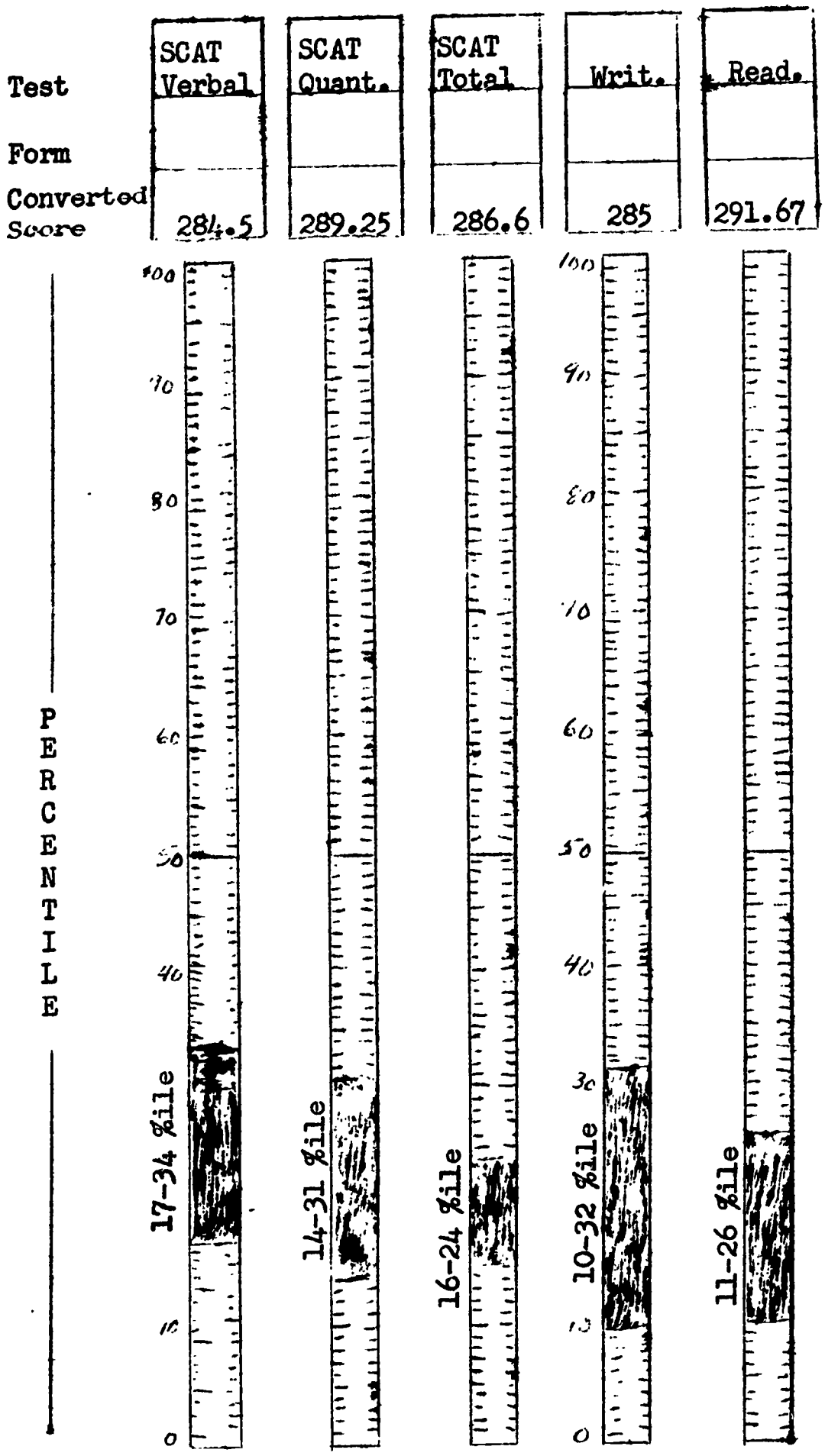


Table V is a compilation of the Sequential Test of Educational Progress Reading scores, Level 1, obtained from the 201 Freshmen students being used in this study. As a whole the local group performed relatively poor in comparison with the national sample, but a few of the examinees did better than the average in the norm. sample.

The class mean is 291.8 with a standard error of 1 showing that the true mean is somewhere between 290.8 and 292.8, a narrow range. The class median is 291.67 and the mode is 294.5. Even though the mode differs numerically from the mean and median, it does not differ importantly.

Thirteen or about 6.5% of the students scored at or above the national median and 188 or nearly 94.5 were below; five or 2.5% of the class scored within the upper quartile of the norm sample and 196 or 97.5% below. Forty-seven or about 23.4% of the class had percentile bands which overlapped with the national median confidence band; while 154 or 77.6% scored significantly below the mid-point of the national group.

The standard deviation, 14.2, plus or minus the mean, 291.8, extends downward to score point 277.6 and upward to score 306 scoping 153 or nearly 76.07% of the 201 examinees. The semi-interquartile range, 7.92, $\pm$ or the median 291.67, includes a spread of about 112 or 55.7% of the distribution extending downward to score point 283.75 and upward to 299.59. Even though the median and mean are almost the same, the dispersion of scores in relation to the standard deviation and mean and relative to the semi-interquartile range and median seem to suggest non-normal symmetry. The curve for this distribution has broad shoulders which indicate a wide spread of reading skills. Five of the examinees or 2.5% of the sample could not be measured by this instrument; eighteen or more than 9% obtained scores which did not differ importantly from zero. The performance of these 18 students was as if it were blind guessing.

Below is a summary table of the Reading scores which includes the national and local medians, lower and upper quartiles and their corresponding national percentile bands. The local mean and mode are also given on the table.

Table V_a

Test	Local		National	
STEP Reading	Converted Scores	Percentile Bands	Converted Scores	Percentile Bands
Median	291.67	10-22	309	37-77
Lower Quartile	281.7	6-12	297	18-34
Upper Quartile	297.5	22-37	319	59-89
Mean	291.8	11-26	---	-----
Mode	294.5	14-30	---	-----

From Table V_a it is seen that in each case of comparison the national score is significantly better than the local. The lower quartile of the national sample is as high as the third quartile of the class. The national median is importantly higher than the third quartile of the class.

The chart also reveals some distortion in the local distribution because Q_3-Q_2 differs numerically from Q_2-Q_1. Since Q_2-Q_1 is the larger of the two, the distortion is toward the right or negative.

Many of the students in the sample at the time the instrument was administered were woefully unprepared to do the level of reading needed to perform successfully in college, that is if this test has any predictive validity.

SUMMARY

From the information obtained and analyzed thus far, it has been found that the majority of the students in the local group are substantially below those in the national sample, according to the SCAT-STEP tests used. It has also been discovered that in each set of scores negative skewness is shown, and that within the local group there is a very wide range of academic abilities in School College Ability, Reading, and Writing Skills. Some of the local students performed so poorly that the scores they made did not vary importantly from zero. Their performance was as if it were blind guessing. There were at least eighteen students whose reading scores (percentile bands) were from 0-4. On each test (in the case of SCAT, each section) there were students who could not be measured by the instrument being used.

The graphic pictures of the scores studied thus far reflect the shapes of the curves that the various sets of scores tend to take (Figures 1-5).

Even though each of the medians for the five sets of scores differ numerically, statistically their differences are insignificant (Figure 6). Therefore, as a whole, the local group performed as well on one test as it did on the other.

Conclusion: Our findings thus far seem to support a dire need for some kind of remedial program if the kind of students who entered DBJC as freshmen, Fall, 1966, are typical of what a fairly large segment of our student body will be like.

Because of the negatively distorted distribution which was found in each set of scores, it may be that we need to take a very close look at our total curriculum offerings in Guided Studies. It may also suggest a careful re-examination of our instructional techniques and practices,

and our attitudes and philosophies of "Test Scores and What They Mean." Much of this, of course, must depend on what happened to the student who participated in Guided Studies the first semester.

What about the success of those who were sent to 101 courses the second semester? Were the drop outs greater proportionately among students in Guided Studies than among other college students? In what score intervals did the largest number of students tend to succeed who went to 101 classes? Did a larger number of students tend to drop out who scored in the lower quartiles of the distribution? What definite trends or patterns, if any, seem to exist?

Will these findings present a challenge to us? Will they stimulate interest to do further research or will they support our present beliefs?

Did the students who initially scored higher realize the best grades for the semester? Were there fewer drop outs among them? Did any of the lower scoring students do as well or better than the higher scoring students? How effective is our present program--total curriculum, instruction, guidance and counseling and research?

And finally, can we do better that which we are doing? Some of these questions will be considered a little later in this present research, but the project will be too young for definite answers to be ascertained. It is the hypothesis of the writer that there may be many unidentified intervening variables operating to influence the behavior of the students.

Table A

CORRELATION TABLE SHOWING THE RELATIONSHIP BETWEEN COOPERATIVE ENGLISH EXPRESSION, FRESHMAN LEVEL, AND ADVANCED CALIFORNIA LANGUAGE SCORES FOR 80 STUDENTS IN GUIDED STUDIES DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA DECEMBER, 1966

Students	English Expression (X)	Grade Placement (Y)	X	Y	X^2	Y^2	XY (+)	XY (-)
1	150	13.5	-3	.2	9	.04		.6
2	135	12.4	-18	-.9	324	.81	16.7	
3	153	13.6	0	.3	0	.09	0	
4	150	13.1	-3	-.2	9	.04		
5	153	12.3	0	-1.0	0	1.00		0
6	157	13.9	4	.6	16	.36	2.4	
7	146	12.6	-7	-.7	49	.49	4.9	
8	156	12.2	3	-1.1	9	1.21		3.3
9	153	13.4	0	.1	0	.01	0	
10	153	13.7	0	.4	0	.16	0	
11	155	13.5	2	.2	4	.04	.4	
12	157	12.5	4	-.8	16	.64		3.2
13	144	12.6	-9	-.7	81	.49	6.3	
14	160	14.7	7	-1.4	49	1.96		9.8
15	147	12.5	-6	-.8	36	.64	4.8	
16	150	12.5	-3	-.8	9	.64	2.4	
17	157	13.4	4	.1	16	.01	.4	
18	147	14.2	-6	.9	36	.81		5.4
19	132	12.5	-21	-.8	441	.64	16.8	
20	143	12.3	-10	-1.0	100	1.00	10.0	
21	151	14.1	-2	.8	4	.64		1.6
22	160	12.8	7	-.5	49	.25		3.5
23	146	13.8	-7	.5	49	.25		3.5
24	148	11.0	-5	-2.3	25	5.29	11.5	
25	145	13.8	-8	.5	64	.25		4.0
26	159	14.2	6	.9	36	.81	5.4	
27	153	13.4	0	.1	0	.01	0	
28	142	10.3	-11	-3.0	121	9.00	33.0	
29	151	13.0	-2	-.3	4	.09	.6	
30	136	12.8	-17	-.5	289	.25	8.5	
31	158	15.0	5	1.7	25	2.89	8.5	
32	160	13.2	7	-.1	49	.01		.7
33	148	12.8	-5	-.5	25	.25	2.5	
34	143	13.1	-10	-.2	100	.04	2.0	
35	153	12.9	0	-.4	0	.16		.0
36	147	14.3	-6	1.0	36	1.00		6.0
37	152	13.2	-1	-.1	1	.01	.1	
38	150	11.5	-3	-1.8	9	3.24	5.4	
39	147	14.1	-6	.8	36	.64		4.8
40	140	12.8	-13	-.5	169	.25	6.5	

Table A (Cont'd)

41	162	13.0	9	-.3	81	.09		2.7
42	157	12.4	4	-.9	16	.81		3.6
43	139	13.0	-14	-.3	196	.09	4.2	
44	146	13.8	-7	.5	49	.25		3.5
45	165	15.0	12	1.7	144	2.89	20.4	
46	153	12.4	0	-.9	0	.81		0
47	162	15.3	9	2.0	81	4.00	18.0	
48	142	14.2	-11	.9	121	.81		9.9
49	150	11.5	-3	-1.8	9	3.24	5.4	
50	162	13.6	9	.3	81	.09	2.7	
51	151	13.3	-2	0	4	0		0
52	160	13.8	7	.5	49	.25	3.5	
53	157	14.9	4	1.6	16	2.56	6.4	
54	148	11.7	-5	-1.6	25	2.56	8.0	
55	149	12.5	-4	-.8	16	.64	3.2	
56	161	12.7	8	-.6	64	.36		4.8
57	168	13.1	15	-.2	225	.04		3.0
58	156	13.3	3	0	9	0	0	
59	147	12.5	-6	-.8	36	.64	4.8	
60	146	13.3	-7	0	49	0		0
61	138	13.4	-15	.1	225	.01		1.5
62	162	13.5	9	.2	81	.04	1.8	
63	152	14.2	-1	.9	1	.81		.9
64	156	12.2	3	1.1	9	1.21		3.3
65	150	12.3	-3	1.0	9	1.00	3.0	
66	159	14.7	6	1.4	36	1.96	8.4	
67	143	13.9	-10	.6	100	.36		6.0
68	134	13.2	-19	.1	361	.01	1.9	
69	149	12.4	-4	.9	16	.81	3.6	
70	146	12.2	-7	-1.1	49	1.21	7.7	
71	144	13.7	-9	.4	81	.16		3.6
72	144	13.7	-9	.4	81	.16		3.6
73	148	12.8	-5	.5	25	.25	2.5	
74	156	13.1	3	.2	9	.04		.6
75	148	14.5	-5	1.2	25	1.44		6.0
76	152	12.8	-1	.5	1	.25	.5	
77	147	14.4	-6	1.1	36	1.21		6.6
78	144	12.9	-9	-.4	81	.16	3.6	
79	144	13.3	-9	.0	81	0		0
80	143	13.5	-10	.2	100	.04		2.0

N = 80 M_x=150.3 M_y=13.3 ΣX^2=4973 ΣY^2=66.67 ΣXY=151.3

$$r = \frac{\Sigma XY}{n\sigma_x\sigma_y} = \frac{\Sigma XY}{\sqrt{\Sigma X^2 \Sigma Y^2}} = \frac{151.3}{335522.91} = .26$$

Table B

CORRELATION TABLE SHOWING THE RELATIONSHIP BETWEEN COOPERATIVE TOTAL ENGLISH, FRESHMAN LEVEL, AND ADVANCED CALIFORNIA LANGUAGE SCORES FOR 80 STUDENTS IN GUIDED STUDIES DAYTONA BEACH JUNIOR COLLEGE, DAYTONA BEACH, FLORIDA DECEMBER, 1966

Students	Total English (X)	Grade Placement (Y)	X	Y	X^2	Y^2	(-)	(+)
1	150	13.5	-3	.3	9	.09	.9	
2	139	12.4	-14	-.8	196	.64		1.12
3	153	13.6	0	.4	0	.16		0
4	150	13.1	-3	-.1	9	.01		.3
5	150	12.3	-3	-.9	9	.81		2.7
6	157	13.9	4	.7	16	.49		2.8
7	145	12.6	-8	-.6	64	.36		4.8
8	158	12.2	5	-1.0	25	1.00	5.0	
9	150	13.4	-3	.2	9	.04	.6	
10	157	13.7	4	.5	16	.25		2.0
11	159	13.5	6	.3	36	.09		1.8
12	157	12.5	4	-.7	16	.49	2.8	
13	153	12.6	0	-.6	0	.36	.0	
14	159	14.7	6	1.5	36	2.25		9.0
15	150	12.5	-3	-.7	9	.49		2.1
16	152	12.5	-1	-.7	1	.49		.7
17	162	13.4	9	.2	81	.04		1.8
18	150	14.2	-3	1.0	9	1.00	3.0	
19	145	12.5	-8	-.7	64	.49		5.6
20	150	12.3	-3	-.9	9	.81		2.7
21	155	14.1	2	.9	4	.81		.8
22	158	12.8	5	-.4	25	.16	2.0	
23	155	13.8	2	.6	4	.36		1.2
24	151	11.0	-2	-2.2	4	4.84		4.4
25	148	13.8	-5	.6	25	.35	3.0	
26	161	14.2	8	1.0	64	1.00		8.0
27	156	13.4	3	.2	9	.04		.6
28	147	10.3	-6	-2.9	36	8.41		17.4
29	152	13.0	-1	-.2	1	.04		.2
30	141	12.8	-12	-.4	144	.16		4.8
31	162	15.0	9	1.8	81	3.24		16.2
32	155	13.2	2	.0	4	.00		.0
33	157	12.8	4	-.4	16	.16	1.6	
34	150	13.1	-3	-.1	9	.01		.3
35	155	12.9	2	-.3	4	.09	.6	
36	155	14.3	2	1.1	4	1.21		2.2
37	157	13.2	4	.0	16	.00		.0
38	151	11.5	-2	-1.7	4	2.89		3.4
39	154	14.1	1	.9	1	.81		.9
40	148	12.8	-5	-.4	25	.16		2.0
41	164	13.0	11	-.2	121	.04	2.2	
42	159	12.4	6	-.8	36	.64	4.8	

Table B (Cont'd)

43	147	13.0	-6	-.2	36	.04		1.2
44	152	13.8	-1	.6	1	.36	.6	
45	162	15.0	9	1.8	81	3.24		16.2
46	159	12.4	6	-.8	36	.64	4.8	
47	165	15.3	12	2.1	144	4.41		25.2
48	147	14.2	-6	1.0	36	1.00	6.0	
49	150	11.5	-3	-1.7	9	2.89		5.1
50	159	13.6	6	.4	36	.16		2.4
51	155	13.3	2	.1	4	.01		.2
52	162	13.8	9	.6	81	.36		5.4
53	159	14.9	6	1.7	36	2.89		10.2
54	150	11.7	-3	-1.5	9	2.25		4.5
55	152	12.5	-1	-.7	1	.49		.7
56	167	12.7	14	-.5	196	.25	7.0	
57	156	13.1	3	-.1	9	.01	.3	
58	156	13.3	3	.1	9	.01		.3
59	145	12.5	-8	-.7	64	.49		5.6
60	155	13.3	2	.1	4	.01		.2
61	142	13.4	-11	.2	121	.04	2.2	
62	158	13.5	5	.3	25	.09		1.5
63	149	14.2	-4	1.0	16	1.00	4.0	
64	159	12.2	6	-1.0	36	1.00	6.0	
65	153	12.3	0	-.9	0	.81	.0	
66	158	14.7	5	1.5	25	2.25		7.5
67	148	13.9	-5	.7	25	.49	3.5	
68	143	13.2	-10	.0	100	.00	.0	
69	148	12.4	-5	-.8	25	.64		4.0
70	144	12.2	-9	-1.0	81	1.00		9.0
71	151	13.7	-2	.5	4	.25	1.0	
72	152	13.7	-1	.5	1	.25	.5	
73	151	12.8	-2	-.4	4	.16		.8
74	158	13.1	5	-.1	25	.01	.5	
75	152	14.5	-1	1.3	1	1.69	1.3	
76	156	12.8	3	-.4	9	.16	1.2	
77	152	14.4	-1	1.2	1	1.44	1.2	
78	147	12.9	-6	-.3	36	.09		1.8
79	150	13.3	-3	.1	9	.01	.3	
80	151	13.5	-2	.3	4	.09	.6	
N = 80	M_x = 153	M_y = 13.2			Σx^2=2591	Σy^2=66.77		ΣXY=137.7

$$r = \left[\frac{\Sigma XY}{n \cdot x \cdot y} \right] = \frac{137.7}{\sqrt{\Sigma X^2 \cdot Y^2}} = \frac{137.7}{\sqrt{2591 \times 66.77}} = .31$$

RECOMMENDATIONS

Beginning with the 1967-68 term the Guided Studies Program will honor the following prerequisites for the courses in the department:

PREREQUISITES FOR ENGLISH COURSES

EH 91 - English I

This course is designed for the student who earns an accumulated high school grade of D in English and scores 289 or below on the SCAT Verbal Test, and scores 291 or below on the STEP Writing Test, and who is not able to write a satisfactory theme.

Emphasis upon English grammar, parts of speech, vocabulary, spelling, punctuation, and capitalization.

EH 92 - English II

This course is designed for the student who scores low on the SCAT and STEP Tests, the same as in EH 91, but indicates a better grasp, but a continued need for grammar, parts of speech, vocabulary, spelling, punctuation, and capitalization as attested by sentence writing. This student must earn C or better to take EH 93. (Note: On recommendation of his instructor, an occasional mature student who is able to organize and write a composition might go directly into EH 101.)

Continuation of EH 91. Emphasis on writing grammatically correct, effective, and interesting sentences.

EH 93 - English III

This student must be able to write short themes employing the use of simple and compound sentences and must earn a grade of C or better to enter EH 94. (Note: On recommendation of his instructor, a occasional mature student who is able to organize and write a composition might go directly into EH 101.)

Outlining and writing of four basic types of discourse, stressing the building of the sentence, and writing themes about literature.

EH 94 - English IV

This student must be able to write more difficult themes employing complex sentences, and the use of variety in sentence structure by subordination to enter EH 101.

Continuation of EH 93.

EH 101

The student who scores 289 and above on the SCAT Verbal Test and 291 and above on the STEP Writing Test, writes an acceptable theme during the fall and spring testing period, and earns a grade of C or better in high school English is eligible to matriculate in EH 101.

PREREQUISITES FOR MATHEMATICS COURSES

MS 91 - Arithmetic for College Students

Student with exceedingly low performance in mathematics based on high school transcript and scores on SCAT Quantitative of 293 or below and the lower one-third performance of the STEP Mathematics Test.

Designed for students who have unsatisfactory scores on placement tests and who require much needed review and added exposure. The material is a carefully organized blending of traditional arithmetic with a slight allusion to contemporary mathematics.

The course deals with the simple introduction to mathematics with emphasis on denominate numbers, basic concepts and principles of arithmetic as they relate to rational numbers.

The areas include the study of numbers, number systems, addition, subtraction, multiplication, division of whole numbers; introduction to common fractions, addition, subtraction, multiplication and division of

fractions; introduction to decimal fractions, addition and subtraction of decimals; the meaning of percent using percent.

MS 92 - Basic Mathematics II

High School Business Mathematics or other mathematics with a grade of B or better and a score of 294 or above on the SCAT Quantitative Test and a score of _____ on the STEP Mathematics Test.

Designed for students who have unsatisfactory scores on the mathematics placement tests, and who require review and exposure beyond the general mathematics limitations of high school. This course is basically traditional, but tinted where necessary with modern concepts. It deals with applications of basic concepts and principles of rational numbers in problem situations. The areas considered in this course are percents and percentages, profit and loss, interest, taxation, ratio and proportion, mixtures, work, distance, rate, and an introduction to numerical equations.

Students successfully completing this course will be eligible for Mathematics 101.

MS 93 - Algebra I

High School Algebra I with a grade of C and a score of 300 on the SCAT Quantitative Test, and a score of _____ on the STEP Mathematics Test.

For students who did not take algebra in high school or who need a review of elementary algebra.

This course is recommended for students who plan to pursue programs requiring algebra and courses beyond. Upon successful completion of this course the student may enter MS 105--College Algebra; or if he does not show proficiency by test, he may enter MS 94--Intermediate Algebra.

MS 94 - Mathematics IV

High School Algebra I and High School Algebra II with a grade of C, or High School Algebra I recently with an A.

A study of intermediate topic of algebra, with a brief review of elementary topics. Consideration will be given to theory of the quadratic equations and functions, graphs, systems of equations--linear and quadratic. Exponents and radicals, ratio and proportion, the binomial expansion--integral powers, and complex numbers.

MS 101

High School Algebra I and Algebra II with a grade of C or better or MS 92.

MS 105

High School Algebra I and Geometry and Algebra II and Trigonometry (or Trigonometry separately) with a grade of C or better, or High School Algebra I plus Geometry plus High School Algebra II recently with B or better.

MS 156

High School Algebra I, Geometry Algebra II and Trigonometry (or Trigonometry separately) at or near A level...OR...High School Analytic Geometry and Calculus, or Math V, or Math Analysis with a grade of C at least.

PREREQUISITES FOR READING COURSES

Anyone who scores below 304 or the 40th percentile on the Reading Test of STEP will be required to register for the Reading Laboratory.

Students scoring between 299-304 or between the 30th-40th percentile should be advised to enroll in RL 94.

Students scoring below 288 or below the 30th percentile should be advised to enroll in RL 91.

The converted scores at the end of the semester will dictate whether the student should be advised to enroll in RL 92 or RL 94.

If a student needs additional reading at the end of his experience in RL 92, he should be advised to register for RL 93.

SOCIAL SCIENCE

The goals which this program will expect are the following:

1. Development of Reading Skills
   a. Mastery of vocabulary in the literature of the social studies
   b. Locating particular topics in selections
   c. Reading graphs
2. Developing the Concept of Chronology
   a. Arranging events in sequence; this also applies to ideas
3. Making Comparisons
   a. Determining likeness and differences of regions, historical events, periods, documents, etc.
4. Visual Perception
   a. Making diagrams of changes in growth of regions, countries, etc., as a result of expansion, treaties, purchases, wars, etc.
5. Determining cause and effect relationships in terms of growth, disputes, war, revolt, etc. in or among countries, etc.
6. Analyzing Information
   a. Reading paragraphs to form questions and stating supporting information.
7. Summarizing
   a. Writing notes on paragraphs or chapters and writing a summary
8. Forming Valid Conclusions

The effective social studies program should enable the students to acquire skill in:

1. Critical thinking
2. Analyzing and resolving problems
3. Locating and gathering information
4. Organizing and evaluating information
5. Reading and listening for meaning
6. Speaking and writing intelligently
7. Interpreting maps, globes, charts, and graphic materials
8. Using time concepts
9. Participating in group activities

A student who has acquired skill in critical thinking is one who has demonstrated ability to:

1. Distinguish fact from opinion
2. Evaluate the reliability of sources of information
3. Draw inferences from given material
4. Determine the relative significance of information
5. Make valid generalizations